the male, Gran Chaco, margin of the River Tapenaga, Colonia Florencia, Argentina, 1903 (E.-R. Wagner). The females were sent by Dr. Juana Petrocchi, the male is from the Paris Museum by the kindness of M. Séguy. Another male and two females have been returned to Paris. Of these, one female bears the same data as cited; another, Gran Chaco, Loma Negra, north of Florencia and of Rio Tapenaga, 1903 (E.-R. Wagner); the male is labeled, Province of Santiago del Estero, Troncal, 40 kil. from Salavina, 1909 (E.-R. Wagner).

This is apparently the species identified by Lynch Arribálzaga as *Psorophora ciliata* (Rev. Mus. de La Plata, ii, 140, plate iv, fig. 3, 1891). If the bare spaces of my figure (Pl. IV, fig. 5) are made black, as is their actual color, the appearance of Arribálzaga's figure is reproduced. (See Pl. IV, fig. 6.)

A REVISION OF THE CHILOSINI

(*Diptera, Syrphidae*)

By RAYMOND C. SHANNON

In my recent paper, "A Reclassification of the Subfamilies and Genera of North American Syrphidae"[1] an attempt was made to reclassify the genera of the *Chilosinae*. Lately, while writing a synopsis of the *Chilosini*, supplementary characters have been found which may further aid to classify its subfamily. The facial tubercle is a striking characteristic of the *Chilosini*, but other genera of the *Chilosinae* have this structure and for this reason a key is given to all of the tuberculate face forms of this subfamily in order to prevent confusion.

It might be stated that the author has been more interested in discovering new group characters to use in classifying the *Syrphidae* than in discovering new species. A number of characters have been found in the *Chilosini* and because of their newness some word of explanation should be added.

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[1] Bull. Brook. Ent. Soc., vol. xvi, 1921.

"The ocelli." These as a rule are very uniform in their position on the frons, but in one species, *Chilosia catalina,* they are placed well forward of the line of the posterior eye margins. This is an imaginary line between the upper posterior corners of the eyes, following the general direction of the posterior eye margins. The position of the ocelli should prove of much use in classifying the *Microdontinae,* as it varies a good deal according to the species and even groups of species in this subfamily.

"Antennal pits separated." In the hairy eyed *Chilosia* the lower median point of the frontal lunule extends well down between the antennae; and at the same time a chitinous projection of the face extends upward between the antenna and meets the downward projection of the frontal lunule. Thus a chitinous ridge is formed which separates the two antennal pits. This is a striking characteristic of the *Melanostomini* (Syrphinae).

"Antennal pits confluent." There is a distinct break between the frontal lunule and facial projections so that the two antennal pits are confluent.

"Pile on the head." The distribution of the pile on the head is of much importance in the Syrphidae and in the above mentioned paper is used to separate the *Eristilinae* from the *Xylotinae.* It can be used to fine advantage in the *Chilosinae,* e. g., the antennal frons is pilose in all of the tuberculate face forms except the subgenus *Barberiella; Chilosia* (sensu stricto) has hairy eyes; and the *Chrysogasterini* and about half of the species of *Chilosia* and one species of *Cartosyrphus, sialia,* have the face pilose.

"Face pilose (or hairy)." This term is intended to mean (in accordance with Becker and Verrall) that the face bears fairly long, distinct pile other than the very fine pollinosity, and the pile on the lateral facial strips.

"Lateral facial strips." The lateral sides of the face in *Chilosini* have a more or less elongate groove separating a more or less broad strip from the rest of the face. These have been called "eye margins" by Becker and Verrall.

"Lower posterior margin of scutellum with downward projecting hairs or pile." Sometimes the lower surface of the scutellum has fairly abundant pile (*Chilosini*); in certain groups of *Chrysogaster* and in *Apicomyia* there is a single row of fine silky hairs. Other genera treated here are without this character.

"Apical cross-vein forming right angles with the third vein." The apical cross-vein changes its oblique course on its distal end and turns upward, meeting the third vein vertically. The upper distal corner of the first posterior cell is in form of a right angle, likewise its complement.

"Apical cross-vein forming an acute angle with the third vein." The apical cross-vein continues its oblique course until it meets the third vein. The first condition tends to be more of the *Chilosinae* type, and has its extreme in the *Chrysogaster* where it is even recurrent on its distal end. It occurs in a number of the *Chilosini* and in *Hammerschmidtia. Microdontinae* also has this type of venation. The acute upper distal corner of the first posterior cell is more characteristic of the *Xylotinae* but occurs in a number of the *Chilosinae* as well.

"Petiole beyond union of apical cross-vein and third vein longer than length of discal cross-vein." This character at once segregates the *Chrysogasterini, Chilosini* and *Hammerschmidtia* from the other tuberculate *Chilosinae.*

"Petiole beyond union of apical cross-vein and third vein shorter than length of discal cross-vein." Occurs in the *Myioleptini.* Another way of saying the upper distal corner of first posterior cell is acute and close to the wing margin.

"Pile on sternopleura." The distribution of the pile on the sternopleura is dependent upon the development and movements of the middle legs. Usually the upper third or fourth region and the apex or lowest point is pilose and a bare smooth space lies between. Malloch has pointed out that in *Sphegina* the sternopleura is bare, while in *Neoascia* the upper margin is pilose, which is a good character for separating these closely allied genera.

"Pile on the posterior antecoxal piece." The posterior antecoxal piece is that part of the venter of the thorax between the middle and the hind coxae. It is pilose in the *Chilosini, Apicomyia, Myiolepta nigra, Rhingia, Ferdinandea, Callicera, Psilota,* and *Pipizini.* It is bare in *Eumyiolepta, Myiolepta varipes, Chalcomyia, Hammerschmidtia, Brachyopa, Pelecocerini, Sphegini* and apparently all the species of *Chrysogaster.* Thus this character is, as in *Xylotinae,* usually only of specific importance.

The *Chilosinae* may be circumscribed by their pilose humeral calli (i. e., pile on the humeri as long as elsewhere on mesonotum); males always with four visible tergites (exclusive of the hypopygium); discal cross-vein placed before middle of discal cell; costal vein ending at or beyond apex of wing; third antennal joint with dorsal arista except *Callicera* and *Pelecocera.*

KEY TO THE GENERA OF CHILOSINAE WITH TUBERCULATE FACE

1. Antennae very elongate with terminal style................*Callicera*
   Antennae with dorsal arista.................................2
2. Discal cross-vein at or beyond middle of discal cell; general color brassy ....*Ferdinandea*
   Discal cross-vein before middle of discal cell.....................3
3. General color ferruginous; thorax, legs and abdomen with bristles ....*Hammerschmidtia*
   General color dark...4
4. Petiole beyond union of third and fourth veins as long as length of discal cross-vein..5
   Petiole beyond third and fourth veins much shorter................7
5. Eyes hairy; antennal pits separated........................*Chilosia*
   Eyes bare; antennal pits confluent.................................6
6. Face bare; both sexes with prominent facial tubercle...*Cartosyrphus*
   Face with pile; males only with tubercle which is very small ....*Chrysogaster* (in part)
7. Pile modified, scale-like..................................*Eumyiolepta*
   Pile normal..8
8. Posterior femur with a saw-tooth projection on outer, apical end................*Apicomyia*, n. gen., type *Myiolepta bella* Will.
   Posterior femora without such structure.................*Myiolepta*

DEFINITIONS OF THE GENERA

Chrysogaster Meigen: Certain males (e. g., *nigripes, texana, greeni, inflatifrons, nigripennis, versipellis, chilosioides*) have a small inconspicuous facial tubercle. Frons and a patch on each side of face faintly rugulose; eyes bare; face with scattered pile; lower posterior edge of scutellum without downward projecting pile (present in *chilosioides, nigripennis, versipellis,* and *alaskensis*); outer edge of scutellum tends to be marginate; dorsal surface of abdomen flattened, opaque, the sides shining; the petiole beyond the union of the third and fourth veins longer than length of discal cell; thorax without bristles.

Callicera Panzer: Antennae very elongate, bearing a terminal style (in others of this group the antenna is of normal length and bears a dorsal arista); eyes, face and upper surface of squamae pilose; lower posterior edge of thorax with downward projecting pile; face inconspicuously tuberculate, thorax without bristles.

Ferdinandea Rondani: General color brassy; eyes and face pilose; thorax with numerous bristles; discal cross-vein joining discal cell at or beyond middle; lower posterior edge of scutellum with downwardly hanging pile; lower sides of tarsi without short bristles; petiole of third and fourth veins as long as discal cross-vein.

Chilosia Meigen: Both sexes with prominent facial tubercles; eyes hairy; face bare (subgenus *Chilosia*); face hairy (new subgenus *Chilomyia,* type *occidentalis* Will.); a distinctly chitinized projection of the face proceeds upward between the antennae to meet a downward projection of the frontal lunule, thus separating each antenna and enclosing each with a chitinous rim; thorax usually with bristles; scutellum not marginate, the lower posterior edge with abundant downward projecting pile; discal cross-vein placed well before middle of discal cell; petiole beyond union of third and fourth veins as long as length of discal cross-vein.

Cartosyrphus Bigot: Differs from the above in having eyes and usually face bare; antennal pits confluent. Subgenus

Hiatomyia Shannon: Arista with long plumosity. Subgenus *Cartosyrphus* Bigot: Arista short pubescent, or bare.

Hammerschmidtia Schummel: General color ferruginous; frontal aspect of head appearing triangular; face tuberculate in male; thorax, legs and abdomen bearing black bristles; petiole beyond third and fourth veins longer than length of discal cross-vein.

Myiolepta Newman: Males only tuberculate; scutellum marginate, lower posterior surface bare; all the femora somewhat swollen, spinose below; apical cross-vein joining third vein nearly at wing margin, the petiole beyond being about one-fourth the length of discal cross-vein; the second vein turning up sharply at its distal end, joining the costa before the middle of the space between the tips of the first and third vein.

Eumyiolepta Shannon: Differs from *Myiolepta* in having the facial and body pile modified into whitish scales.

Apicomyia, new genus; type *Myiolepta bella* Will.: Differs from *Myiolepta* in having the shape of the head, viewed from the frontal aspect, distinctly triangular; facial tubercle inconspicuous but present in both sexes; scutellum faintly marginated, lower posterior edge with a row of downward projecting fine hairs; second vein but slightly turned up at its tip and joining the costa well beyond the middle of the section between the first and third veins; hind femora greatly enlarged, with a prominent sawtoothed projection on the outer apical end.

Chrysogaster Meigen, subgenus **Barberiella,** new.

Frons bare; face with fairly abundant pile; second antennal joint above and below with bristles greater in length than third antennal joint; face tuberculate in male; lower posterior edge with a single row of downward projecting pile; anal vein beyond anal cell short, being little longer than discal cross-vein; apical cross-vein directed outward.

Named after Herbert S. Barber, who has on many occasions proven his exceptional ability to collect rare insects.

Type: *Barberiella chilosioides,* new species.

Barberiella chilosioides, new species.

Male. Rather small, but fairly robust species; shining black, with a steel blue reflection on abdomen; pile everywhere black except on anterior corners and lateral margins of abdomen where it is luteous.

Frons flattened, rugulose, with a shallow, median, longitudinal impression; face clothed with black pile from base of antennae to oral margins except for a broad bare median patch; epistoma small, well rounded, situated about its own length above the frontal oral notch. Face noticeably longer than broad and, in line with base of tubercle, very slightly and evenly concaved from antennae to oral notch. Pile on scutellum fairly long, longer and coarse on the margin. Pleurae with fairly long dense pile. Middle and hind coxae with strong, black pile. Squamae, squamal cilia and halteres brown. Length 7.5 mm.; wing 6.5 mm.

One male, Eureka, California, June 2 (H. S. Barber).

Type.—Cat. No. 25387, U. S. Nat. Mus.

Barberiella versipellis Will. (described as a species of *Chilosia* by Williston) is very closely related. It differs in having the face nearly as broad as long, deeply concaved between epistoma and tubercle; facial pile shorter and more scattered. Wings smoky. Genitalia styles longer and narrower.

These two species form a unique group in *Chrysogaster.* They approach *Chilosia* very closely and as all of their characters, except the rugulose patches on the face, the bare frons and flat abdomen, seem to be repeated in one or another of the species of *Chilosini* it is rather difficult to separate them. The general habitus allies them much more to *Chrysogaster.* Moreover, the females probably will prove to have no tubercle on the face, another character which would ally them to *Chrysogaster.* In fact a female specimen determined as *Chrysogaster lata* Loew and compared with the type of that species by Williston may prove to be the female of *B. versipellis* Will. This specimen was characterized in my paper on *Chrysogaster* (Proc. Ent. Soc. Wash., 1915) as "Group 3." The males of

Barberiella agree in having the tip of the fifth vein extending slightly beyond the tip of the first vein. This character was stated in my paper "stigma shorter than distance between the tips of the first and third veins." In *chilosioides* these distances are about the same but the wording of the character may be changed to tip of fifth vein extending beyond tip of first vein and will serve to further separate groups 3 and 4.

Chrysogaster alaskensis, new species.

A very large species for *Chrysogaster,* uniformly blackish aeneous; dorsum of abdomen shining.

Female.—Frons broad but little widening from posterior margin to antennae, faintly, but widely rugulose; clothed with black pile except on antennal front (i. e., a fairly wide stripe just above the antennae and comprising the lower sixth of the frons); antennae jet black; second joint bearing bristles above and below, one of the upper ones being greater in length than width of second joint; arista nearly equal to width of frons, pubescent; face flat, slightly receding, epistoma well developed, bearing pile only on the sides, the epistoma and the jowls.

Mesonotum with two median faint stripes anteriorly; pile largely black with a little luteous intermixed; scutellum with fairly long, rather coarse black pile, the lower posterior border with downward projecting luteous pile; pleurae with black pile, becoming light colored on upper region of sternopleura.

Legs black, pile ranging from black to light golden.

Dorsum of abdomen somewhat flattened, shining black aeneous, somewhat opaque on middle of second and third segments, clothed with pale pile.

Wings a little smoky, stigma dark brown. Apical cross-vein forming an acute angle with the third vein; tip of fifth vein extending beyond tip of first vein; petiole beyond anal cell shorter than length of discal cross-vein. Squamae and plumula yellowish white; halteres reddish yellow.

Length 8.5 mm.; wing 7.5 mm.

Type.—Cat. No. 25386, U. S. Nat. Mus.

Two females: Anchorage, Alaska, June 11, 1921 (type), and Valdez, Alaska, June 8, 1921 (J. M. Aldrich).

This striking species apparently comes in the subgenus *Barberiella,* as is evidenced by the bare antennal frons (this seems to be the counterpart of the bare frons in the males of *chilosioides* and *versipellis*), the projecting hairs on the lower posterior margin of the scutellum and the venation. If this proves to be the case it would bear out my belief that the females of tuberculate-faced male *Chrysogasterini* in all cases have no tubercle.

Tribe CHILOSINI

The genus *Chilosia* is one of the largest of the Syrphid genera in Europe. Becker in his revision of the European forms treats one hundred and forty species. In Williston's Synopsis of Syrphidae there are twenty species recorded from North America. Three of these have been placed in other genera and one has been found to be the female of a previously described species. In the present paper an equal number of additional species have been described which, with what have been recognized in recent years, swells their number to fifty. Of the new species described since Williston's synopsis a large proportion (ten) have been collected by Dr. J. M. Aldrich, most of them in Idaho. Another collector who has added to the museum collection considerable material in *Chilosia,* not only of collected but also of reared material, is Mr. H. E. Burke, of the Bureau of Entomology. Mr. Burke tells in one of his recent papers that seventeen years ago Dr. E. A. Schwarz showed him the single specimen of *Trachykele* (Coleoptera) possessed by the National Museum and said: "Do not bring in the common things. Get the rare ones, get the rare ones." Since that time over a hundred specimens of the four named species have passed through Burke's hands, and the Museum now has the most representative collection of *Trachykele* in the world. And he adds, "All from the deep impression made on the mind of a young collector by the inspiring words of Dr. Schwarz."

Mr. Burke has shared some of his success as a collector with the *Chilosia,* and has worked out the life history of some of the species causing black check in the western hemlock. He bred *Chilosia hoodiana* from *Abies concolor* and *grandis;* and *C. burkei* from *Tsuga heterophylla.* This latter species was determined as *Cheilosia alaskensis* Hunter by Coquillett.

Until a few years ago the hairy eyed species of *Chilosia* were considered to be almost entirely of western distribution in North America. About half a dozen species are now known to occur in the eastern United States.

In this study the writer has separated the *Chilosia* (old sense) somewhat after the manner of Becker, according to the pilosity of the eyes and face.

He has supplemented the character of "eyes hairy" with the character "antennal pits separated," and has considered the species having these characteristics as forming the genus *Chilosia* and for those with "eyes bare" and "antennal pits" confluent he has resurrected Bigot's generic name *Cartosyrphus.* This makes nearly an even division of our North American species.

Unfortunately the type species of *Chilosia, flavipes,* has the eyes sometimes bare in the female but the writer believes that this species will be found to have the antennal pits separated, which would put the genus *Chilosia* on a better basis.

Each of these genera may be further divided into two subgenera. The *Chilosia* with hairy face are considered as forming the subgenus *Chilomyia;* those with bare face form the subgenus *Chilosia. Cartosyrphus* is divided by arista long plumose, subgenus *Hiatomyia,* and arista short plumose, subgenus *Cartosyrphus.* There are other smaller groups of species containing closely allied forms, which are distinct from the other species, such as the *comosa* group which have the frons and face very broad, the arista very short and thorax without bristles, but it would avail nothing to consider such groups as subgenera.

The pile on the face apparently makes an arbitrary division in *Chilosia,* as among the hairy faced forms there are some which are closely related to the bare faced forms. However, it is an excellent specific character, for it is constant in a species where it occurs. About the only exception to this occurs in *nigrovittata*. The facial pile is very sparse in this species and in some specimens it appears altogether absent. For this reason *nigrovittata* is keyed in both the face bare and face pilose groups. Good supplementary specific characters are found in the described species so there is very little chance for duplication of species in the two subgenera as they now stand. Another character of considerable interest in this group is the shining, deep blue color of certain species. This color occurs sporadically in quite a number of cases in unrelated species in both genera. Altogether eight species are so colored in this tribe.

The sexual dimorphism is so great in the Chilosini that the sexes are best keyed separately. Very often species which key close together are from widely separated parts of the country. For this reason localities are given in the keys.

A. Eyes hairy; antennal pits separated (type *flavipes*)........*Chilosia*.
  a. Face bare..................subgenus *Chilosia* males 1, females 1
  aa. Face hairy ....subgenus, new (type *occidentalis* Will.) Chilomyia males 13, females 17
B. Eyes bare; antennal pits confluent....................*Cartosyrphus*.
  Arista long plumose.................................... subgenus, new (type *willistoni* Snow). *Hiatomyia* males 1, females 1
  Arista pubescent to bare, subgenus (type *pagana*) *Cartosyrphus* males 8, females 12

CHILOSIA—MALES

Eyes hairy; antennal pits separated

1. Face bare....................................subgenus *Chilosia* 2
  Face hairy................................subgenus *Chilomyia* 13
2. Large (about 12 mm.), robust species, clothed with long pile; no bristle-like hairs on thorax; head triangular in shape; posterior cross-vein as long or longer than ultimate section of apical cross-vein..3
  Pile short, usually bristle-like hairs present on thorax; head broadly oval; posterior cross-vein shorter than ultimate section of fourth vein..6
3. Shining bronze species, with abundant golden pile (Mexico) *chrysochlamys* Will.
  Not shining bronze 4

4. Abdomen shining steel blue; third and fourth segments with black pile (California, Washington) .... *chalybescens* Will.
Abdomen blackish with pale yellow or brownish pile 5

5. Tibiae and tarsi largely yellow, face but little protruding downward (*lasiophthalma* complex Alaska, Washington, Oregon, Colorado, New Hampshire, North Carolina), *lasiopthalma* Will.
Tibiae largely black; face much protruding downward (Oregon, Washington) .... *ferruginea* Lovett.

6. Fore coxa with a short, but distinct, spur on outer anterior corner (western America spp.) 7
Fore coxa without spur 8

7. Legs entirely black (Idaho) .... *aldrichi* Hunter.
Apices of tibiae yellowish (Brit. Col.; Idaho) .... *columbiae* Curran.

8. Pile on pleurae luteous; no bristle-like hairs on thorax (Idaho)[1] .... *florella*, n. sp.
Pleural pile black; bristle-like hairs on alar callosities and scutellum 9

9. Small species, 7-8 mm.; antennae black (Alaska) ...... *borealis* Coq.
Larger species, 10-12 mm.; antennae usually not pure black...... 10

10. Antennae and legs, including pile on the legs, entirely black; wings smoky (Massachusetts) .... *hiawatha*, n. sp.
Antennae brown or reddish yellow; pile on coxae whitish or luteous 11

11. Wings rather strongly infuscated; dorsum of thorax with a well defined band of black pile; face usually with a few long hairs (Oregon, Washington) .... *nigrovittata* Lovett.
Wings but little infuscated; pile on mesonotum concolorous...... 12

12. Face scarcely concaved between antennae and tubercle. See female (Ontario, New York, New Hampshire, North Dakota) .... *orilliaensis* Curran
Tubercle very large and convex (California) .... *baroni* Will.

13. Thoracic pile black, the pile on the venter alone being pale; general color dark blue (Washington) .... *burkei*, n. sp.
Pleural pile more or less light colored; general color black, or greenish black 14

14. Legs distinctly bicolored; arista shorter than width of frons measured across lunule; mesonotal pile entirely luteous (eastern United States) .... *primoveris* Shann.
Legs black, merging into dark brown; arista as long as, usually longer than, width of frons; mesonotal pile usually brownish or partly black 15

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[1] *C. hunteri* Curran (Manitoba, Canad. Ent., May, 1922) probably comes here.

15. Dorsum of thorax with well defined band of black pile (face sometimes without long hairs; see bare face section) (Oregon, Washington)........................*nigrovittata* Lovett.
Thorax without such band....................................16

16. Face distinctly excavated between antennae and tubercle..........17
Face but slightly excavated....................................18

17. Arista about as long as width of frons measured across base of antennae; face broader than one-third width of head (Idaho, Washington, Oregon)...*petulca* Will. and *hoodiana* Bigot.
(Abdomen yellowish = *hoodiana-flaviabdominalis,* n. var.)
Arista very long, exceeding width of frons; face about one-third width of head (Europe; reported from Alaska), *variabilis* Panz.

18. Arista shorter than width of frons; medium sized species (Alaska) ....*yukonensis,* n. sp.
Arista slightly longer than width of frons; robust species (*pacifica* and *occidentalis* complex)..........................19

19. "Thickly white pilose species" (California)........*pacifica* Hunter.
Thorax with intermixed black and brownish pile (California, New Mexico, Colorado, Alaska)...............*occidentalis* Will.

Chilosia—Females

Eyes hairy; antennal pits separated

1. Face bare....................................Subgenus *Chilosia* 2
Face hairy ....Subgenus *Chilomyia* 17

2. Frontal view of outline of head triangular shaped; posterior cross-vein longer than distance from its tip to tip of apical cross-vein. Large, usually very long pilose species...............3
Frontal view of head broadly oval in outline; posterior cross-vein shorter than distance from its tip to tip of apical cross-vein; short pilose species....................................8

3. Shining bronze, with abundant golden pile (Mexico), *chrysochlamys* Will.
Not shining bronze...4

4. Abdomen shining steel blue; third and fourth segments with black pile (California, Washington)...........*chalybescens* Will.
Abdomen blackish 5

5. Arista distinctly shorter than width of frons measured across antennae; pile rather short (Idaho)...............*julietta,* n. sp.
Arista longer than width of frons...............................6

6. Face, much produced downward, cone-like; legs largely black with long pile (Oregon, Washington)..........*ferruginea* Lovett.
Face rather moderately produced downward.......................7

7. Abdominal pile short, black on posterior half; middle tibiae and tarsi largely black; hind legs with short pile (Idaho), *bicolorata,* n. sp.

Abdominal pile concolorous with that on thorax; legs largely black; hind legs with short pile (*lasiophthalma* complex) (Colorado, New Mexico, Alaska, New Hampshire, North Carolina) .... *lasiophthalma* Will.

8. Fore coxa with a short but distinct spur on outer anterior corner (western America) 9

Fore coxa without spur 11

9. Legs entirely black .... *aldrichi* Hunter.

Legs partly yellow 10

10. Female with erect pile of normal length on mesonotum; length 10-12 mm. (Brit. Col., Idaho) .... *columbiae* Curran.

Female with short depressed pile on mesonotum; length 7-8 mm. (Colorado) .... *aldrichi-pikei,* n. var.

11. General color steel blue; apical cross-vein forming an acute angle with the third 12

General color shining greenish black or black; apical cross-vein bending upright on its distal end and meeting the third in a vertical position, thus forming right angles 13

12. Pile on pleurae and coxae black (Alaska) .... *alaskensis* Hunter.

Pile on pleurae partly pale; coxae with pale pile (Oregon, Washington) .... *burkei,* n. sp.

13. Pleurae with black pile and bristles mixed with the light; antennae black; length 7.5 mm. (Alaska) .... *borealis* Coq.

Pleurae with only light colored pile; 9-11 mm 14

14. "Everywhere profoundly punctured; wings uniformly, distinctly yellowish." Pile on front and mesonotum pale, short (Nebraska) .... *punctulata* Hunter.

Not unusually punctured 15

15. Face becoming much wider than the front, half the width of face, i. e., from tip of oral notch to the eye margin, much wider than width of front measured across ocelli; antennae reddish yellow (Idaho) .... *florella,* n. sp.

(*C. sororia,* Mexico, with its red antennae and bristleless scutellum probably comes here.)

Front and face widening evenly from ocelli to lower corners of eyes, half the width of face but little greater than width of front across ocelli 16

16. Scutellum without bristles; pile whitish, fairly long and abundant, giving species a grayish appearance; antennae brown (California) .... *baroni* Will.

Scutellum with long, slender bristles; pile rather sparse, species appearing shining black (Ontario, New York, New Hampshire, North Dakota) .... *orilliaensis* Curran.

17. Antennae bright reddish yellow 18
Antennae dark brown 21

18. General color dark steel blue; thoracic pile largely black 19
General color greenish black; thoracic pile luteous (Washington, Idaho, Oregon) .... *petulca* Will. = *hoodiana* Bigot.

19. Halteres dark brown; pile on pleurae and scutellum largely luteous (New Mexico) .... *sonoriana*, n. sp.
Halteres reddish yellow; scutellar pile mostly black 20

20. Pleural pile mostly black; scutellar pile short; head higher than broad, small species (New Hampshire) .... *pontiaca*, n. sp.
Pleural pile equally luteous and black; scutellar pile long; head broader than high; medium sized species (Oregon, Washington) .... *burkei*, n. sp.

21. Legs entirely black (Europe) .... *variabilis* Panz.
Legs partly brown or black 22

22. Apical cross-vein sinuate; tibiae yellow with medium broad black bands; small, eastern species (Virginia, Maryland, Pennsylvania) .... *primoveris* Shann.
Apical cross-vein parallel with wing margin except on distal end where it is turned upright; tibiae black and brown (western species) 23

23. Arista shorter than width of frons measured across base of antennae (Alaska) .... *yukonensis*, n. sp.
Arista equal to width of frons (California, Colorado, New Mexico) .... *pacifica-occidentalis* complex.

CARTOSYRPHUS—MALES

Eyes bare; antennal pits confluent

1. Arista with long, or dense, plumosity which can be perceived with naked eye (subgenus *Hiatomyia*) 2
Arista very short plumose to bare (subgenus *Cartosyrphus*) 8

2. Arista very densely plumose for more than one-half its length; third antennal joint large, bright yellow; mesonotum with long black hairs intermixed with the luteous pile (Idaho), *signatiseta* Hunter.
Arista with long, loose rays 3

3. Thorax shining deep steel blue 4
Thorax black or greenish black 5

4. Face less than one-third the width of the head; facial strips very narrow (eastern North America), *plumata* Lw. and *cyanescens* Lw.

Face greater than one-third the width of head; facial strips broad (Idaho, Washington)......................*cyanea* Hunter.

5. Face distinctly longer than wide; pteropleura, besides the long black bristles, with yellowish pile (California).*townsendia* Hunter.

Face about as broad as long; pteropleura clothed with coarse black hairs 6

6. Anterior corners of second tergite with black pile; beyond this the lateral abdominal pile is luteous (California)..*willistoni* Snow.

Sides of second tergite entirely black pilose; third and fourth tergites with alternating black and white patches................7

7. Halteres and basal parts of wings infuscated; third antennal joint reddish brown (Alaska)..................*plutonia* Hunter.

Halteres yellow; wings hyaline; third antennal joint black with a reddish brown spot (Idaho)................*idahoa,* n. sp.

8. Margin of scutellum with bristles...............................9

Margin of scutellum without bristles...........................19

9. Face clothed with scattered pile; shining, very dark blue species (New Brunswick)..........................*sialia,* n. sp.

Face without pile except on lateral strips, general color black, or greenish black..10

10. Entirely black, including legs and antennae.....................11

Tibiae and tarsi partly reddish brown...........................12

11. Squamae with white cilia (Oregon, Washington)......*laevis* Bigot.

Squamae with blackish cilia (Colorado). Recorded as *laevis* Bigot by Jones, but may prove to be the male of *lucta* Snow.*lucta?*

12. Antennal pits separated; squamae white with white cilia..........13

Antennal pits confluent...15

13. Lateral facial strips about three times diameter of arista (Europe) ....*pulchripes* Lw.

Lateral facial strips much broader..............................14

14. Apical cross-vein turning upward, forming right angles with third vein (Alaska) ....*hesperia,* n. sp.

Apical cross-vein forming an acute angle with third vein (Alaska) ....*kincaidia,* n. sp.

15. Femora largely yellow (Virginia, Maryland, New Jersey, New Hampshire) ....*pallipes* Lw.

Femora black with yellowish apices..............................16

16. Hind metatarsus swollen, larger than posterior tibia; third antennal joint reddish yellow (Virginia, Maryland, Pennsylvania, New Jersey, New York)...................*similis* Shann.

Hind metatarsus equal in girth to hind tibia.....................18

17. Arista bare (apparently closest related to *pallipes* group), (Ontario)....................................*ontario* Curran.

Arista pubescent 18

18. Northern species (*tristis* complex) ....*tristis* Lw.
Southwestern species (see ♀) ....*sororocula* Will.
19. Arista noticeably longer than width of frons measured at antennae; scutellum with a transverse, shallow groove running parallel with posterior margin 20
Arista much shorter than width of frons measured at base of antennae 21
20. Pile on frons and mesonotum luteous; styles very long and slender; costa, from base to tip of auxiliary vein, with conspicuous long black hairs (Virginia, District of Columbia, Maryland, Pennsylvania) ....*capillata* Loew.
Pile on frons and anterior corners of mesonotum black; inconspicuous hairs on costa except at base, styles short and broad ....*slossonæ,* n. sp.
21. Frons nearly bare (Nebraska) ....*laevifrons* Jones.
Frons well clothed with long pile 22
22. Only a slight trace of silvery pruinosity on frons, the pile dark (Colorado) ....*tarda* Snow.
Pile on frons light, the silvery pruinosity very apparent when specimen is held in proper reflection 23
23. Pile on anterior part of mesonotum as long as pile on frons (Colorado) ....*brevichaeta,* n. sp.
Pile on mesonotum half as long as on frons 24
24. Head greatly enlarged (Indiana) ....*caltha,* n. sp.
Head moderately enlarged (Canada) ....*comosa* Lw.

CARTOSYRPHUS—FEMALES

Eyes bare

1. Arista with very long loose, or very dense plumosity; scutellum with bristles ....*Hiatomyia* 2
Arista short plumose, pubescent or bare ....*Cartosyrphus* 12
2. Arista thickly plumose; pile on mesonotum largely luteous (*signatiseta* group) 3
Arista with scattered long rays; pile on mesonotum largely black... 5
3. Third antennal joint unusually large, about fifteen times that of the second, and bright yellow in color; arista very densely plumose (Idaho) ....*signatiseta* Hunter
Third joint only half this size, or less; arista less thickly plumose .. 4
4. Mesopleurae with only light pile; mesonotum with a near golden colored pile, the scutellar bristle hairs concolorous (British Columbia) ....*canadensis,* n. sp.
Mesopleurae with tuft of long, coarse black hairs; pile of mesonotum duller in color; black bristle-like hairs on scutellum (Colorado) ....*gemini,* n. sp.

5. Legs largely yellow; face usually more or less yellow............6

Legs largely black; face black.................................7

6. Scutellum partly yellowish; mesonotum brassy black (California) ....*townsendia* Hunter.

Thorax entirely steel blue (northeastern America), *plumata* Lw.; *cyanescens* Lw.

7. Shining blue species; third antennal joint bright reddish yellow (Oregon: *nigro-coerula* Lovett; Washington), *cyanea* Hunter.

Shining black species...8

8. Pile on dorsum of thorax black; tubercle prominent; third antennal joint reddish yellow (Alaska)..........*gracilis* Hunter.

Pile on mesonotum at least partly luteous or whitish..............9

9. A tuft of black bristle-like hairs on the pteropleura, as well as mesonotum (Alaska)........................*plutonia* Hunter.

Only light-colored pile on pteropleura..........................10

10. Arista shorter than width of frons at antennae; legs solid black; length 65 mm. (Nevada)...................*plumosa* Coq.

Arista as long or longer than width of frons...................11

11. Frons with luteous pile; length 6.5 mm...............*idahoa,* n. sp.

Frons with black pile; length 8 mm. (California)..*willistoni* Snow.

12. Scutellum with bristle-like hairs, usually black..................13

Scutellum at most with a few long pale hairs....................20

13. Face, humeri and scutellum more or less yellowish...............14

Face and thorax black...16

14. Arista very finely pilose; dorsum of thorax punctulate; posterior femora light-colored at apex only; black, moderately shining species (Carolina).......................*leucoparea* Lw.

Arista noticeably pubescent; greenish black species..............15

15. Legs almost entirely yellow, yellow markings of face and thorax bright lemon yellow (District of Columbia)...*pallipes* Lw.

Legs with more or less black; yellow markings of more or less obscured color (northern North America: *tristis* complex ....*tristis* Lw.

16. Third antennal joint very large, six times or more than that of the second, and bright orange (Alaska).........*kincaidi,* n. sp.

Third joint not half so large....................................17

17. Tarsal joints dilated, particularly the posterior ones; pile everywhere pale, even the scutellar bristles (Arizona, Mexico) ....*sororocula* Will.

Tarsi not dilated, bristles black................................18

18. Entirely shining black (Washington) *laevis* Bigot; (Colorado) *lucta* (?) Snow. Other characters for *lucta* are:

Arista about equal to width of frons measured at base of antennae; third antennal joint subquadrate, blackish...*lucta* Snow.

Antennae reddish yellow to brown; tibiae and tarsi partly brown; arista about one and half times width of frons.........19

19. Length of frons about twice its width; arista noticeably pubescent; hind metatarsus thickened (Virginia, Maryland, Pennsylvania, New Jersey, New York).........*similis* Shannon.

Length of frons nearly three times its width; arista very faintly pubescent; hind metatarsus equal in girth to tibia (Ontario).......................................*rita* Curran.

20. Legs and antennae entirely black (Colorado)...........*lucta* Snow.

Legs and antennae partly yellowish...............................21

21. Scutellum with a distinct groove-like depression near apical border; arista much longer than width of frons; third antennal joint enormous..22

Scutellum with an evenly convex surface; arista much shorter than width of frons...24

22. Legs almost entirely yellow (Pennsylvania)..........*prima* Hunter.

Femora, except their apices, black...............................23

23. Third antennal joint as broad as distance between root of antennae and eye margin, and with a distinct slit on inner surface (Virginia, Maryland, Pennsylvania).........*capillata* Lw.

Third joint much broader than this distance and without a slit (New Hampshire)...............................*slossoni*, n. sp.

24. Third antennal joint longer than broad, brownish (Indiana), *caltha*, n. sp.

Third joint circular 25

25. Frons flattened; shining black species (Canada).........*comosa* Lw.

Frons not flattened, trisulcate...............................26

26. Third joint reddish yellow; general color shining aeneous (Colorado) ....*brevichaeta*, n. sp.

Third joint brown; general color shining black (Colorado), *tarda* Snow.

INDETERMINATE SPECIES

There are two described species which the author is uncertain of regarding their position in the key, hence are given here with what appears to be their salient characters.

Chilosia chintimini Lovett (Proc. Cal. Acad. Sci. XI, 15, 1921).

Male.—Eyes pilose, face hairy; no bristles anywhere. Nearly black with mostly black pile. Similar to *ferruginea* and *lasi-*

ophthalma in size and length of pile, but its uniform black color separates it. (Probably is close to *nigrovittata*.)

Chilosia skinneri Johnson (Trans. Am. Ent. Soc., 29, p. 101, 1902).

Eyes bare; sides of face yellow and covered with whitish pubescence, leaving a broad, shining medial stripe; antennae reddish, upper edge of third joint dark brown; arista bare. Thorax black, dorsal portion shining and sparsely covered with very fine white hairs; humeri with a whitish bloom; pleurae with a tuft of white hairs in front of the wing base; scutellum with two slight bristles; halteres white. Legs, including coxae, uniformly light yellow. Length 5.5 mm.

May belong to *tristis* group but may prove to be a member of the Syrphinae.

Chilosia robusta Hine (Ohio Journ. Sci., p. 144, 1922).

Curran writes me that he believes this species to be the same as his *C. columbiae.*

Chilosia sonoriana, new species.

Shining, dark bluish black species. Eyes and face hairy; scutellum with bristles.

Female.—Shining, dark bluish black with short pile. Antennae bright yellow, third joint rounded; arista blackish, microscopically pubescent. Face shining bluish black, thinly clothed with fine, pale and black hairs; deeply concaved below antennae, tubercle protrudes noticeably beyond antennal prominence; epistoma a little produced beyond antennal base; eye margins narrow, with short pale pile. Mesonotum with short, blackish pile, on the lateral margins with rather long black hairs; a few bristles on postalar calli; pleurae with thick whitish and black pile; scutellum with pale pile and black marginal bristles. Legs black except the apices of the femora and the bases of the tibiae which are brownish. Abdomen shining, dark bluish black with very short pale and dark pile, on the sides longer and all pale. Wings large with a smoky tinge; stigma dark luteous; veins black. Squamae dirty yellowish with a brownish margin and pale yellow cilia; halteres reddish black. Length 9 mm.; wing 9 mm.

Type.—Cat. No. 25377, U. S. Nat. Mus.

Described from two females; Las Vegas, New Mexico, June, 1901, 11,000 feet altitude (T. D. A. Cockerell).

Among the species of *Chilomyia, catalina* is closest related to *sonoriana* but has a much less prominent face.

Chilosia catalina, new species.

Female.—Medium size, rather robust species, entirely shining steel blue color; eyes hairy; face bare; scutellum with bristles; apical cross-vein forming an acute angle with the third vein; arista a little longer than width of frons measured at base of antennae; ocelli set well before the posterior corners of the eyes; frons with rather sparse and fairly stiff black pile; frons and face fairly broad, their lateral margins widening evenly to lower corner of eyes; antennae bright reddish yellow; third joint about five times as large as the second; arista reddish yellow at base, darkening outwardly, pubescent. Mesonotum with short luteous pile and short stiff black hairs intermixed, and bristles near the wing bases; pleurae with whitish pile and no bristles. Femora black, yellowish at apex; tibiae brownish, becoming lighter at their apices and bases; tarsi brownish. Abdomen with only whitish pile. Wings reddish yellow at base and lutescent throughout; squamae pale reddish yellow; halteres reddish yellow. Length 9.5 mm.; wing 8.25 mm.

Type.—♀, Cornell University collection.

Collected at Webber's Cabin, Mount Lemon, Santa Catalina Mountains, Arizona, July 27, 1917, by J. C. Bradley of the Cornell Biological Expedition. Other specimens in the Cornell collection and one in the Biological Survey collection.

Chilosia alaskensis Hunter is its nearest ally of the bare faced Chilosiae. It differs from *C. catalina* by having the ocelli placed in line with the posterior margins of the eyes; a noticeably broader frons and face, the arista is shorter than the width of the frons; the upper edge of the third antennal joint is blackish; the arista brownish throughout; pile on the mesonotum composed only of rather short stiff black hairs; pile on the pleurae is black; darker legs; and black pile on abdomen.

In spite of the fact that the face is bare and the general color is black *C. hoodiana* appears to be its closest ally. However, there are a number of specific differences which serve to separate them. *C. hoodiana* (♀) has the face broader and somewhat produced downward, a shorter arista and costal bristles (i. e., just beyond the base of costa) of moderate length, noticeably shorter than length of discal cross-vein; whereas in *catalina* these bristles are unusually long, some being longer than length of discal cross-vein. *C. burkei* is distinguished from it by its somewhat downward produced face, and entirely dark legs, as well as its pilose face.

Chilosia hiawatha, new species.

Male.—Large, entirely black species with smoky wings; eyes hairy; face bare; scutellum with long black bristle-like hairs; ocellar and frontal triangles with fairly long black pile; ocellar triangle with central, longitudinal, smooth broad groove; antennae and arista black; third joint small, nearly round in outline; arista long, but little shorter than hind metatarsus. Thoracic pile black, fairly long on mesonotum and long and coarse on pleurae; bristles on mesonotum near wings. Legs entirely black with black pile. Second and third tergites subopaque, broadly shining on anterior corners, elsewhere shining dark bronzy green. Wings blackish at base, becoming less infuscated apically; squamae whitish with yellowish rim; halteres whitish with darkened knobs. Length 11 mm.; wing 9.5 mm.

Type.—Cat. No. 25374, U. S. Nat. Mus., ♂.

Collected at Forest Hills, Massachusetts. Sent to writer by Dr. J. Bequaert.

This species keys out with *nigrovittata*, *oriliaensis* and *borealis* as its closest associates. It is abundantly distinct from each of these and may be distinguished at once by the black pile of thorax and legs.

Chilosia florella, new species.

Male.—Less than medium size, greenish black in color;

clothed with pile entirely luteous in color; eyes hairy; face bare; a few long and very slender hairs, besides the usual pile, on scutellum which are also luteous in color; antennae and arista yellowish brown; third joint small, about twice as large as second; arista fairly short, bare; face moderately concave between the eyes and tubercle; tubercle prominent, not extending as far as base of antennae. Femora black, darkened at their apices; tibiae yellow, broadly darkened in the middle; tarsi brownish. Abdomen but little opaque on second and third tergites. Wings luteous throughout, more deeply so basally; squamae white; halteres reddish brown. Length 7.5 mm.; wing 6.5 mm.

Female.—Of medium size, otherwise similar in general appearance to male. Antennae reddish yellow; third joint about four times as large as the second; arista subequal to width of frons at antennae; face rather deeply excavated; tubercle pronounced and extending beyond antennal base. Legs with color pattern similar to male but more orange in color. Wings rather broad, luteous. Length 8.75 mm.; wing 7.25 mm.

Type.—Cat. No. 25373, U. S. Nat. Mus., male. One female, allotype.

Collected at Moore's Lake, Idaho, July 10, 1907, by J. M. Aldrich.

Chilosia bicolorata, new species.

Female.—Large species; eyes pilose, face bare; thorax with long, dense pale pile; abdomen with short black pile on third, fourth and fifth segments; thorax brassy, abdomen shining black; pile on frons, eyes and facial strips long and pale; face prominent, produced downward, covered with unusually long pubescence but which is by no means as long as pile on facial strips. Antennae reddish yellow, third joint large, its lower edge rounded; arista brown, equal to width of frons at base of antennae. Thoracic pile luteous. Femora black with brownish apices; tibiae brown with broad median black band; tarsi blackish. Sides of first and second and basal corners of third tergite brassy with luteous pile; rest of abdomen black with black pile. Wings faintly smoky; squamae white; halteres brownish. Length 12 mm.; wing 8.5 mm.

Type.—Cat. No. 25369, U. S. Nat. Mus.

One specimen, Moore's Lake, Idaho, July 10, 1907 (J. M. Aldrich).

Chilosia julietta, new species.

Female.—Fairly large species with rather long dense pile on thorax; eyes pilose, face protruding downward, bare; thorax dark aeneous with brownish pile; abdomen dark aeneous on sides, rather inclined to be broadly opaque black in middle; pile on frons and eyes lutescent to brown; antennae fairly large, reddish brown; third joint quadrate; arista brown, shorter than width of frons. Face shining black, pale pubescent on mouth slopes. Thorax dark aeneous with brownish pile. Femora black with brownish apices; tibiae yellowish basally, darkened on apical half; tarsi darkened. Abdominal pile luteous to brownish. Wings smoky; squamae faintly yellowish, halteres reddish yellow. Length 10.5 mm.; wing 8 mm.

Type.—Cat. No. 25370, U. S. Nat. Mus.

One specimen collected at Julietta, Idaho, May 3, 1901 (J. M. Aldrich).

Chilosia orilliaensis Curran.

Male.—Medium sized species, shining black. Eyes hairy, face bare, blackish pilose with thoracic bristles. Head broadly oval, almost circular in outline; antennae medium, brownish; arista black, slender, longer than frons; face very slightly concave between antennae and the very inconspicuous tubercle. Epistoma but slightly produced. Femora black with brownish apices; tibiae brown with broad medium black bands; tarsi darkened. Second and third tergites broadly opaque. Basal corners of the tergites aeneous with luteous pile, posterior corners black with black pile. Wings smoky; squamae faintly brown, with brown cilia, halteres brown. Length 9.5 mm.; wing 8 mm.

Female.—Pile entirely pale, short on mesonotum, fairly long on pleurae. Antennae reddish yellow, normal in size, third joint slightly longer than broad; face entirely covered with whitish pubescence; epistoma very slightly produced. Wings smoky; squamae white; halteres reddish yellow. Length 9 mm.; wing 7 mm.

Redescribed from sixteen specimens, eight males, eight females.

A rather common early spring species attracted to the swamp marigold, *Caltha palustris,* in the swamps in the region about Ithaca, New York.

In a batch of material Mr. C. W. Johnson sent the writer there is a series of specimens collected at Halfway House, Mount Washington, June 13, 1916, and July 16, 1915, which are so similar to the New York specimens that they are placed with them. Also in Dr. Aldrich's collection there are two females collected by him at Lake Metigoche, Turtle Mountains, North Dakota, June 20, 1918, which are quite inseparable from *orilliaensis.* Thus this species appears to have a wide northern range. It is rather closely related to *C. baroni,* which may be distinguished from *orilliaensis* by its brown antennae.

Chilosia burkei, new species.

Male (allotype).—Deep blue species, clothed with black pile. Eyes and face hairy. Head broadly oval in outline; antennae reddish brown; arista long, about half again as long as width of frons; face gently concave from antennae to rather prominent tubercle. Thoracic pile rather long, longer and coarser on scutellum, the downward projecting pile on the lower posterior border blackish. Femora black, tibiae and tarsi brown; pile on coxae white with black hairs intermixed. Basal corners of tergites aeneous with light pile, posterior corners black with brown pile. Wings slightly smoky; squamae slightly tinged, cilia darker; halteres reddish yellow. Length 8.75 mm.; wing 7.5 mm.

Female (type).—Frontal, facial and mesonotal pile black; antennae large, reddish yellow; arista brown, pubescent, longer than width of frons; tubercle prominent, exceeding base of antennae; face produced downward. Scutellum with long, slender bristles; pleurae with mostly light pile. Pile on coxae light; legs blackish brown, knees light brown. Abdomen shining dark blue, with light pile. Wings faintly tinted; apical cross-vein tends to be slightly upturned on its distal end; third vein broadly curved downward. Squamae white with yellowish border and cilia; halteres reddish yellow. Length 9 mm.; wing 8 mm.

Type.—Cat. No. 25376, U. S. Nat. Mus.; female, Hoquiam, Washington, May 18, 1903. H. E. Burke collector. Male, allotype, Hoquiam, Washington, reared from *Tsuga heterophylla*. Also one female, Dewalto, Washington, June 7, 1906, and Moscow, Idaho, both taken by Dr. J. M. Aldrich.

This species was determined as *C. alaskensis* by Coquillett and is the name used by Burke in his paper, "Black Check in Western Hemlock," Bureau of Entomology Circular 61, 1905. (See *C. catalina.*)

Chilosia pontiaca, new species.

Female.—Rather small, shining dark blue species; eyes and face hairy. Frontal, facial and mesonotal pile black. Antennae reddish yellow; arista brown, pubescent, longer than width of frons; tubercle prominent, extending beyond antennal base. Scutellum with stiff bristles. Sternopleurae with light pile, pleurae elsewhere with black pile. Legs black, knees brown; pile on coxae black and light. Abdomen shining dark blue, with short black pile; wings faintly tinged; apical corner of first posterior cell acute; squamae faintly yellow; halteres yellow. Length 7 mm.; wing 6.25 mm.

Type.—In C. W. Johnson's collection.

Three specimens, Halfway House, Mount Washington, New Hampshire, July 6, 1914 (C. W. Johnson).

Cartosyrphus kincaidia, new species.

Eyes bare; arista minute pubescent; face bare; scutellum with bristles; female with face, humeri and scutellum black; male with opaque bands.

Male.—Ocellar triangle with black and whitish pile; frontal triangle black with black pile. Antennae reddish yellow, first two joints darkest; third joint longer than broad; arista reddish brown. Face gently concave; tubercle distinct, epistoma not produced; eye margins with fine, whitish pile, silvery pollinose near antennae. Thorax shining black with rather long dirty yellowish pile, side margin and postalar calli with black hairs and bristles; pleurae with pile somewhat paler than that on mesonotum and with a few black bristles. Scutellum with yellowish pile and with the margin thickly beset with black bristles. Femora shining black, their apices yellowish; tibiae bright yellow with an infuscate band about middle; fore tarsi with the first and last joints darkened, the others yellow; middle with only the last joint darkened; hind tarsi with first joint black, the second and last darkened, the others dark yellow. Abdomen shining dark greyish; second and third segments with opaque bands about one-fourth width of a segment on posterior margins; the pile on the dorsum short dirty yellowish and dark, the sides with fairly long, whitish pile, hypopygium with short black pile. Wings with the costa vein brought well around the tips and the third vein in meeting the end of the costa takes a broad, decidedly downwardly curved direction. Wings with a slight brownish tinge; stigma luteous. Squamae and cilia pale yellowish white; halteres dark orange. Length 6–8 mm.; wing 5–7 mm.

Female.—Frons shining black, with very short, pale and blackish pile. Antennae bright orange, upper and outer edge of third joint sometimes darkened; third joint very large, a little longer than broad. Face shining black with the face more prominent than in the male. Thorax with very short, scattered lutescent pile. Scutellum with fewer bristles than the male. Legs marked as in the male. Abdomen entirely shining with very short pale pile. Wings broader than in the male and the third vein with the broad curve. Squamae and cilia whitish, halteres orange. Length 6–7 mm.; wing 5–6 mm.

Type.—Cat. No. 25382, U. S. Nat. Mus., male; female allotype.

Four males and four females; Kukak Bay, Alaska, July 1 and 4, 1899, Saldovia, Alaska, July 21, 1899 (Harriman Expedition, 1899, T. Kincaid, collector).

Coquillett recorded (Proc. Wash. Acad. Sci., vol. 11, p. 428, 1900) this species as *Chilosia pulchripes* of Europe. It is closely related, but the eye margins of *kincaidia* are broader; the scutellum more thickly beset with bristles and the opaque bands on the abdomen but little more than half as wide. The most striking difference is the big curve in the third vein. *Pulchripes* has this vein only gently bowed.

Cartosyrphus slossonæ, new species.

Shining greenish species. Eyes bare; arista short pubescent; scutellum without bristles; abdomen of male partly opaque; tibiae mostly yellow.

Male.—Pile on ocellar and frontal triangles moderately long, dark brownish. Frontal triangle punctate. Antennae yellowish brown, third joint large, longer than broad, arista blackish, microscopically pubescent, about one and one-fourth the length of antenna. Face shining black, broadly silvery pollinose below antennae, concave below, the tubercle protrudes as far forward as antennal prominence; epistoma not protruding; lower margin of face drops but little forward; eye margins narrow, punctate and with short pale pile. Mesonotum with pale pile, lateral margins with rather dense, short, blackish hairs; postalar calli with a few long black hairs; pleurae with mostly pale pile, the rest dark brownish; scutellum with pale pile, no black hairs or bristles. Femora black, yellow on apices, clothed with black and white pile; tibiae yellow, each with an infuscate band about middle; first and last tarsal joints darkened, the others yellowish. Second and third abdominal segments opaque on posterior margin, the third rather broadly subshining down the middle, rest of abdomen shining metallic very dark greenish; fourth and fifth segments with some black pile, the pile on rest of abdomen short, pale dirty yellowish, longer along sides. Wings with a yellowish tinge; stigma luteous, last section of fourth vein very long. Squamae yellowish white, the margin and the cilia pale yellowish; halteres pale yellowish. Length 10.5 mm.; wing 9.5 mm.

Female.—Head less subspherical than in the male. Front shining black with short yellow pile. Antennae brownish or bright yellow, third joint very large, longer than broad; arista blackish. Face more deeply concave than in the male. Thorax with short lutescent or golden pile. Legs as in the male except that the tibiae lack the infuscate band on the middle and the first tarsal joints of the fore and middle legs are yellow. Abdomen entirely shining with short, dirty yellowish pile. Wings with a brownish orange tinge, stigma more strongly yellowish. Wings a little shorter and broader and the last section of fourth vein much shorter than the male's. Squamae and halteres like the male's. Length 9.25 mm.; wing 7.5–8 mm.

Type.—Cat. No. 25388, U. S. Nat. Mus., one male, two females. Type and paratype, females, Franconia, New Hampshire (Mrs. Slosson); allotype, male, Littleton, New Hampshire (F. F. Hodgemann).

Chilosia capillata Loew is its closest ally, but the male has pale pile on frontal and ocellar triangles; the third antennal joint noticeably smaller; no black pile or hairs on the thorax; no infuscate band on the fore and middle tibiae; all the pile on the abdomen is pale and shorter and the last section of the fourth vein is shorter. The female has the third antennal joint smaller and darker, the yellow on the legs not as bright and the pile everywhere is paler. *C. slossoni,* female, has the third antennal joint nearly equal in size to the third joint of *C. signatiseta.* In *capillata* the width of the face below the antennae is noticeably greater than the length of arista while *slossoni* has the width less than the length of arista.